



DECUS

PROGRAM LIBRARY

DECUS NO.	8-356
TITLE	PAGE PRINTER
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COMPANY	Texas Instruments Limited Bedford, England
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SOURCE LANGUAGE	MACRO-8

PAGE PRINTER

DECUS Program Library Write-up

DECUS NO. 8-356

ABSTRACT

This program is designed to produce pages of a required length from ASCII paper tape fed from either the low or high speed readers.

After program has been loaded (starting address $\emptyset 2\emptyset\emptyset$) set switch register to 1. Make sure tape to be read is set at first character on either HSR or LSR.

If machine halts on blank area of tape before program is completed - press Continue.

100-100000

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PAGE PRINTER

FOLLOWS PROGRAM TO CREATE PAGES FROM ASCII TAPE

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/
/FOLLOW THE DEFINITIONS
AUTOX=16
PROGPN=17
DEFINE WRITE QAZX
<CLA CLL
TAD (QAZX-1
DCA AUTOX
JMS TITLE>
/
*200/ START OF MAIN PROGRAM
0200 7300 START,CLA CLL
0201 4043 JMS INITIA/INITIALISE PERIPHERALS
0202 4031 JMS PAPER / GET SOME PAPER
0203 7300 WRITE BUNF/ INSTRUCTIONS ON OPERATION
0204 1377
0205 3016
0206 4322
0207 4162 JMS MULTI
0210 7300 WRITE PROGNM/PROGRAM NAME???
0211 1376
0212 3016
0213 4322
0214 4055 JMS NAME/READ AND STORE PROG NAME
0215 4162 JMS MULTI
0216 7300 WRITE LINES/ HOW MANY LINES???
0217 1375
0220 3016
0221 4322
0222 4070 JMS NMREAD/READ TWO FIGURE NUMBER
0223 1265 TAD LINECN
0224 4774 JMS BCDBIN/CONVERT TO BINARY
0225 3265 DCA LINECN/AND STORE AWAY
0226 4162 JMS MULTI
0227 7300 WRITE OPTION/ WHICH READER???
0230 1373
0231 3016
0232 4322
0233 4105 JMS INPUT
0234 4162 JMS MULTI
0235 4131 CARYON,JMS SCORE
0236 4020 JMS CARLF;
0237 4031 JMS PAPER
0240 4772 JMS PAGEPR
0241 4162 JMS MULTI
0242 1265 TAD LINECN
0243 7041 CIA
0244 3266 DCA LINECM
0245 4771 JMS PROGPR
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0246 4162 JMS MULTI
/
0247 4117 ONWARD,JMS LEGE
0250 3267 DCA TEMP01
0251 1267 TAD TEMP01
0252 7041 CIA
0253 1027 TAD RET
0254 7640 SZA CLA /SKIP IF YES
0255 7410 SKP
0256 5270 JMP NEXTLI
0257 1267 TAD TEMP01
0260 7440 SZA /SKIP IF A BLANK
0261 7410 SKP
0262 5276 JMP ENDPROG
0263 4123 JMS TYPE
0264 5247 JMP ONWARD / GET NEXT CHARACTER
0265 0000 LINECN,0
0266 0000 LINECM,0
0267 0000 TEMP01,0
/
0270 1267 NEXTLI,TAD TEMP01
0271 4123 JMS TYPE
0272 2266 ISZ LINECM
0273 5247 JMP ONWARD
0274 4031 JMS PAPER
0275 5235 JMP CARYON
/
0276 7402 ENDPROG,HLT;
0277 7404 OSR
0300 0370 AND (01
0301 7640 SZA CLA
0302 7410 SKP
0303 5306 JMP VERYEND
0304 7402 HLT
0305 5247 JMP ONWARD
/
0306 2266 VERYEND,ISZ LINECM
0307 5317 JMP .+10
0310 4031 JMS PAPER
0311 4020 JMS CARLF
0312 4131 JMS SCORE
0313 4020 JMS CARLF
0314 7402 HLT
0315 7300 CLA CLL
0316 5200 JMP START
0317 1027 TAD RET
0320 4123 JMS TYPE
0321 5306 JMP VERYEND
0322 0000 TITLE, 0 / TEXT TYPEOUT SUBROUTINE
0323 1363 WORD, TAD M2

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0324	3360		DCA CNT2
0325	1416		TAD I AUTOX
0326	3361		DCA S2
0327	1361		TAD S2
0330	7100		CLL
0331	7012		RTR;
0332	7012	RTR;	
0333	7012	RTR	
0334	0364	AGAIN,	AND K77
0335	7440		SZA
0336	5340		JMP .+2
0337	5722		JMP I TITLE
0340	3362		DCA S3
0341	1362		TAD S3
0342	1365		TAD M40
0343	7710		SPA CLA
0344	5350		JMP .+4
0345	1362		TAD S3
0346	1366		TAD K200
0347	5352		JMP .+3
0350	1362		TAD S3
0351	1367		TAD K300
0352	4123		JMS TYPE
0353	2360		ISZ CNT2
0354	5356		JMP .+2
0355	5323		JMP WORD
0356	1361		TAD S2
0357	5334		JMP AGAIN
0360	0000	CNT2,0	
0361	0000	S2,0	
0362	0000	S3,0	
0363	7776	M2,-2	
0364	0077	K77,77	
0365	7740	M40,-40	
0366	0200	K200,200	
0367	0300	K300,300	
		/	
0370	0001	*20/THIS PAGE CONTAINS ALL THE UTILITY SUBS.	
0371	0400		
0372	0600		
0373	1077		
0374	0540		
0375	1050		
0376	1027		
0377	0777		
0020	0000	CARLF,0/ CAR RET, LINE FEED SUB	
0021	7300	CLA CLL	
0022	1027	TAD RET	
0023	4123	JMS TYPE	
0024	1030	TAD CAR	

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0025 4123 JMS TYPE
0026 5420 JMP I CARLF
0027 0212 RET,212
0030 0215 CAR,215
/
0031 0000 PAPER,0/ GEN. 5 LINE FEEDS
0032 1041 TAD M5
0033 3042 DCA COUNT
0034 1027 MORE,TAD RET
0035 4123 JMS TYPE
0036 2042 ISZ COUNT
0037 5034 JMP MORE
0040 5431 JMP I PAPER
0041 7773 M5,-5
0042 0000 COUNT,0
/
0043 0000 INITIA,0/ PERIPHERAL INITIALISATION
0044 6046 TLS;
0045 6032 KCC;
0046 6014 RFC
0047 1177 TAD (PROGSP-1
0050 3017 DCA PROGPN
0051 3054 DCA PAGECN
0052 4162 JMS MULTI
0053 5443 JMP I INITIA
0054 0000 PAGECN,0
/
0055 0000 NAME,0/READ CHARACTER STRING AND PACK AWAY
0056 4142 JMS READ
0057 3042 DCA COUNT
0060 1042 TAD COUNT
0061 3417 DCA I PROGPN
0062 1042 TAD COUNT
0063 7041 CIA
0064 1030 TAD CAR
0065 7640 SZA CLA
0066 5056 JMP NAME+1
0067 5455 JMP I NAME
/
0070 0000 NMREAD,0/READ AND ECHO TWO NUMBERS
0071 4101 JMS RANDST
0072 7006 RTL;
0073 7006 RTL
0074 3776 DCA LINECN
0075 4101 JMS RANDST
0076 1776 TAD LINECN
0077 3776 DCA LINECN
0100 5470 JMP I NMREAD
/
0101 0000 RANDST,0/ READ AND STRIP SUBR.

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0102 4142 JMS READ
0103 0175 AND (17
0104 5501 JMP I RANDST
/
0105 0000 INPUT,0/LOOK FOR H OR L AND SET UP LEGE SUB.
0106 4142 JMS READ
0107 1174 TAD (-314
0110 7650 SNA CLA
0111 5114 JMP LSERV
0112 1173 TAD (HIREAD
0113 7410 SKP
0114 1172 LSERV,TAD (LOREAD
0115 3122 DCA WHICH
0116 5505 JMP I INPUT
/
0117 0000 LEGE,0/ GET CHARACTER FROM APR READER
0120 4522 JMS I WHICH
0121 5517 JMP I LEGE
0122 0000 WHICH,0
/
0123 0000 TYPE,0/ASR 33 PRINTING SUB.
0124 6041 TSF
0125 5124 JMP .-1
0126 6046 TLS
0127 7200 CLA
0130 5523 JMP I TYPE
/
0131 0000 SCORE,0/ SUB TO SCORE PAPER
0132 7300 CLA CLL
0133 1171 TAD (-90
0134 3042 DCA COUNT
0135 1170 CARYOM,TAD (255
0136 4123 JMS TYPE
0137 2042 ISZ COUNT
0140 5135 JMP CARYOM
0141 5531 JMP I SCORE
/
0142 0000 READ,0/ READ MIT ECHO
0143 6031 KSF
0144 5143 JMP .-1
0145 6036 KRB
0146 6046 TLS
0147 5542 JMP I READ
/
0150 0000 HIREAD,0/ READ FROM HSR
0151 6011 RSF
0152 5151 JMP .-1
0153 6016 6016
0154 5550 JMP I HIREAD
/

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0155 0000 LOREAD,0/ READ FROM ASR 33
0156 6031 KSF
0157 5156 JMP --1
0160 6036 KRB
0161 5555 JMP I LOREAD/ NO ECHO BY THE WAY
/
0162 0000 MULTI,0/PRINT 2 CARLFS SUB.
0163 4020 JMS CARLF;
0164 4020 JMS CARLF
0165 5562 JMP I MULTI
/
*400/ PROGRAM NAME PRINTING SUB
0400 0000 PROGPR,0
0401 1377 TAD (PROGSP-1
0402 3017 DCA PROGPN
0403 1417 TAD I PROGPN
0404 3214 DCA TEMP02
0405 1214 TAD TEMP02
0406 4123 JMS TYPE
0407 1214 TAD TEMP02
0410 1376 TAD (-215
0411 7640 SZA CLA/SKIP ON RET
0412 5203 JMP PROGPR+3
0413 5600 JMP I PROGPR
0414 0000 TEMP02,0
/
0415 0000 PROGSP,0/SPACE FOR PROGRAM NAME
/
*540
0540 0000 BCDBIN,0/ BCD TO BIN CONVERT SUBR.
0541 3370 DCA TEMPH
0542 1370 TAD TEMPH
0543 0366 AND LDIGIT
0544 7112 CLL RTR
0545 3042 DCA COUNT
0546 1042 TAD COUNT
0547 7010 RAR
0550 1042 TAD COUNT
0551 7041 CMA IAC
0552 1370 TAD TEMPH
0553 3370 DCA TEMPH
0554 1370 TAD TEMPH
0555 0367 AND MDIGIT
0556 7112 CLL RTR
0557 3042 DCA COUNT
0560 1042 TAD COUNT
0561 7010 RAR
0562 1042 TAD COUNT
0563 7041 CMA IAC
0564 1370 TAD TEMPH

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0565 5740 JMP I BCDBIN
0566 7400 LDIGIT,7400
0567 7760 MDIGIT,7760
0570 0000 TEMPH,0
/
0576 7563 *600/ THIS PAGE CONTAINS THE PAGE NUMBER PRINTING
0577 0414
/
ROUTINES
0600 0000 PAGEPR,0/ PRINTS 34 SPACES AND PAGE NUMBER
DECIMAL
0601 1377 TAD (-29
OCTAL
0602 3223 DCA TEMP03
0603 1376 SPACE0,TAD (240/ ASCII SPACE
0604 4123 JMS TYPE
0605 2223 ISZ TEMP03
0606 5203 JMP SPACE0
0607 1375 TAD (275
0610 4123 JMS TYPE
0611 1376 TAD (240
0612 4123 JMS TYPE
0613 2054 ISZ PAGECN
0614 1054 TAD PAGECN
0615 4224 JMS DECPRT
0616 1376 TAD (240
0617 4123 JMS TYPE
0620 1375 TAD (275
0621 4123 JMS TYPE
0622 5600 JMP I PAGEPR
0623 0000 TEMP03,0
/
/
0624 0000 DECPRT, 0/PRINTS DECIMAL NUMBER FROM BINARY
0625 3271 DCA VALUE
0626 1374 TAD (-4
0627 3310 DCA CNTIN
0630 1311 TAD RESET
0631 3275 DCA RTCRKT+1
0632 3272 DCA DIGIT
0633 1263 TAD CNTRZA
0634 3273 DCA CNTRZB /SET COUNT TO 4
0635 1262 TAD ADDRZA
0636 3243 DCA ARROW /SET POINTER
0637 7410 SKP
0640 3271 DCA VALUE
0641 7100 CLL
0642 1271 TAD VALUE
0643 1264 ARROW, TAD TENPWR
0644 7430 SZL
0645 2272 ISZ DIGIT

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0646	7430	SZL
0647	5240	JMP ARROW-3
0650	7200	CLA
0651	1272	TAD DIGIT
0652	4274	JMS RTCRKT
0653	1270	TAD K260 /CONVERT ASCII
0654	4123	TTYGO,JMS TYPE
0655	3272	DCA DIGIT
0656	2243	ISZ ARROW/ INCREMENT POINTER
0657	2273	ISZ CNTRZB /DONE 4 ?
0660	5242	JMP ARROW-1 /NO
0661	5624	JMP I DECPRT
0662	1264	ADDRZA,TAD TENPWR
0663	7774	CNTRZA,-4
0664	6030	TENPWR, -1750
0665	7634	-0144
0666	7766	-0012
0667	7777	-0001
0670	0260	K260,260
0671	0000	VALUE,0
0672	0000	DIGIT,0
0673	0000	CNTRZB,0
0674	0000	RTCRKT, 0
0675	2310	ISZ CNTIN
0676	5300	JMP .+2
0677	5674	JMP I RTCRKT
0700	7640	SZA CLA
0701	5304	JMP .+3
0702	1376	TAD (240
0703	5254	JMP TTYGO
0704	1373	TAD (7410
0705	3275	DCA RTCRKT+1
0706	1272	TAD DIGIT
0707	5674	JMP I RTCRKT
0710	0000	CNTIN,0
0711	2310	RESET,ISZ CNTIN
		/
		/ FOLLOW THE TEXTS
0773	7410	*1000
0774	7774	
0775	0275	
0776	0240	
0777	7743	
1000	4014	BUNF,TEXT / L
1001	1701	OA
1002	0440	D
1003	2401	TA
1004	2005	PE
1005	4011	I
1006	1640	N

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1007	2205	RE
1010	0104	AD
1011	0522	ER
1012	5440	,
1013	0116	AN
1014	0440	D
1015	1617	NO
1016	2405	TE
1017	4002	B
1020	1124	IT
1021	4061	I
1022	6140	I
1023	0625	FU
1024	1603	NC
1025	2411	TI
1026	1716	ON
1027	4000	/
1030	1601	PROGNM,TEXT /NA
1031	1505	ME
1032	4017	O
1033	0640	F
1034	2022	PR
1035	1707	OG
1036	2201	RA
1037	1540	M
1040	5063	(3
1041	6040	0
1042	0310	CH
1043	0122	AR
1044	5640	.
1045	1501	MA
1046	3056	X.
1047	5177)?
1050	4000	/
1051	1017	LINES,TEXT /HO
1052	2740	W
1053	1501	MA
1054	1631	NY
1055	4014	L
1056	1116	IN
1057	0523	ES
1060	4020	P
1061	0522	ER
1062	4020	P
1063	0107	AG
1064	0550	E(
1065	1501	MA
1066	3056	X.
1067	4071	9
1070	7154	9,

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1071	2427	TW
1072	1740	O
1073	0611	FI
1074	0723	GS
1075	5651	.)
1076	7740	?
1077	0000	/
1100	2710	OPTION,TEXT /WH
1101	1103	IC
1102	1040	H
1103	2205	RE
1104	0104	AD
1105	0522	ER
1106	4050	(
1107	1075	H=
1110	1023	HS
1111	2254	R,
1112	4014	L
1113	7501	=A
1114	2322	SR
1115	6363	33
1116	5177)?
1117	4000	/
1120	0000	MARK,0
		/
		/
0170	0255	\$
0171	7670	
0172	0155	
0173	0150	
0174	7464	
0175	0017	
0176	0265	
0177	0414	

PAGE PRINTER SYMBOL TABLE

ADDRZA	0662
AGAIN	0334
ARROW	0643
AUTOX	0016
BCDBIN	0540
BUNF	1000
CAR	0030
CARLF	0020
CARYOM	0135
CARYON	0235
CNTIN	0710
CNTRZA	0663
CNTRZB	0673
CNT2	0360
COUNT	0042
DECPRT	0624
DIGIT	0672
ENDPRO	0276
HIREAD	0150
INITIA	0043
INPUT	0105
K200	0366
K260	0670
K300	0367
K77	0364
LDIGIT	0566
LEGE	0117
LINECM	0266
LINECN	0265
LINES	1051
LOREAD	0155
LSERV	0114
MARK	1120
MDIGIT	0567
MORE	0034
MULTI	0162
M2	0363
M40	0365
M5	0041
NAME	0055
NEXTLI	0270
NMREAD	0070
ONWARD	0247
OPTION	1100
PAGECN	0054
PAGEPR	0600
PAPER	0031
PROGNM	1030
PROGPN	0017

PAGE PRINTER SYMBOL TABLE

PROGPR	0400
PROGSP	0415
RANDST	0101
READ	0142
RESET	0711
RET	0027
RTCRKT	0674
SCORE	0131
SPACE0	0603
START	0200
S2	0361
S3	0362
TEMPH	0570
TEMP01	0267
TEMP02	0414
TEMP03	0623
TENPWR	0664
TITLE	0322
TTYGO	0654
TYPE	0123
VALUE	0671
VERYEN	0306
WHICH	0122
WORD	0323

*TYPE OUT SCORE, (CARYON)
PAGE NUMBER (PAGEPR)
PROG. NAME (PROGPR)

